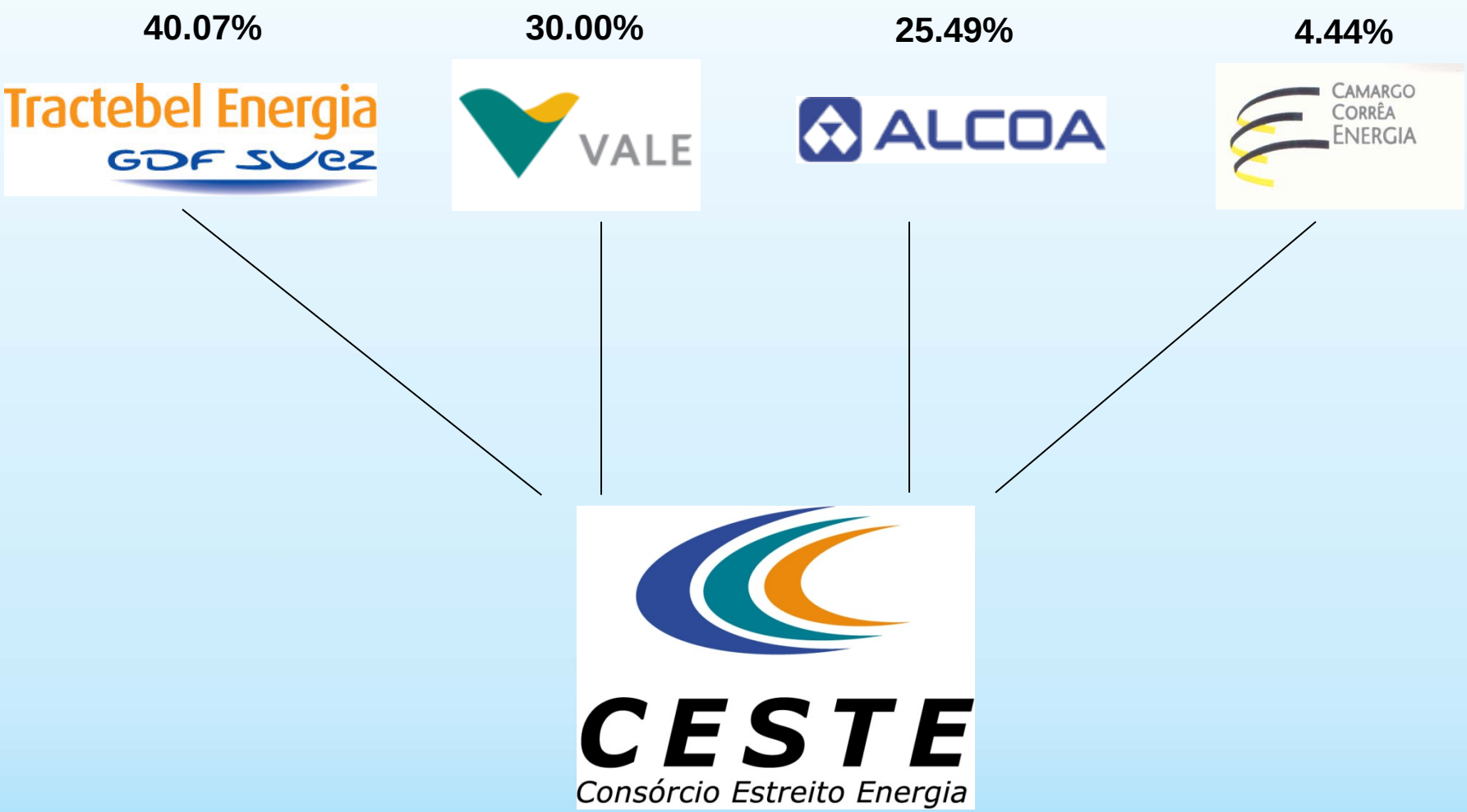
ESTREITO HYDROELETRIC POWER PROJECT

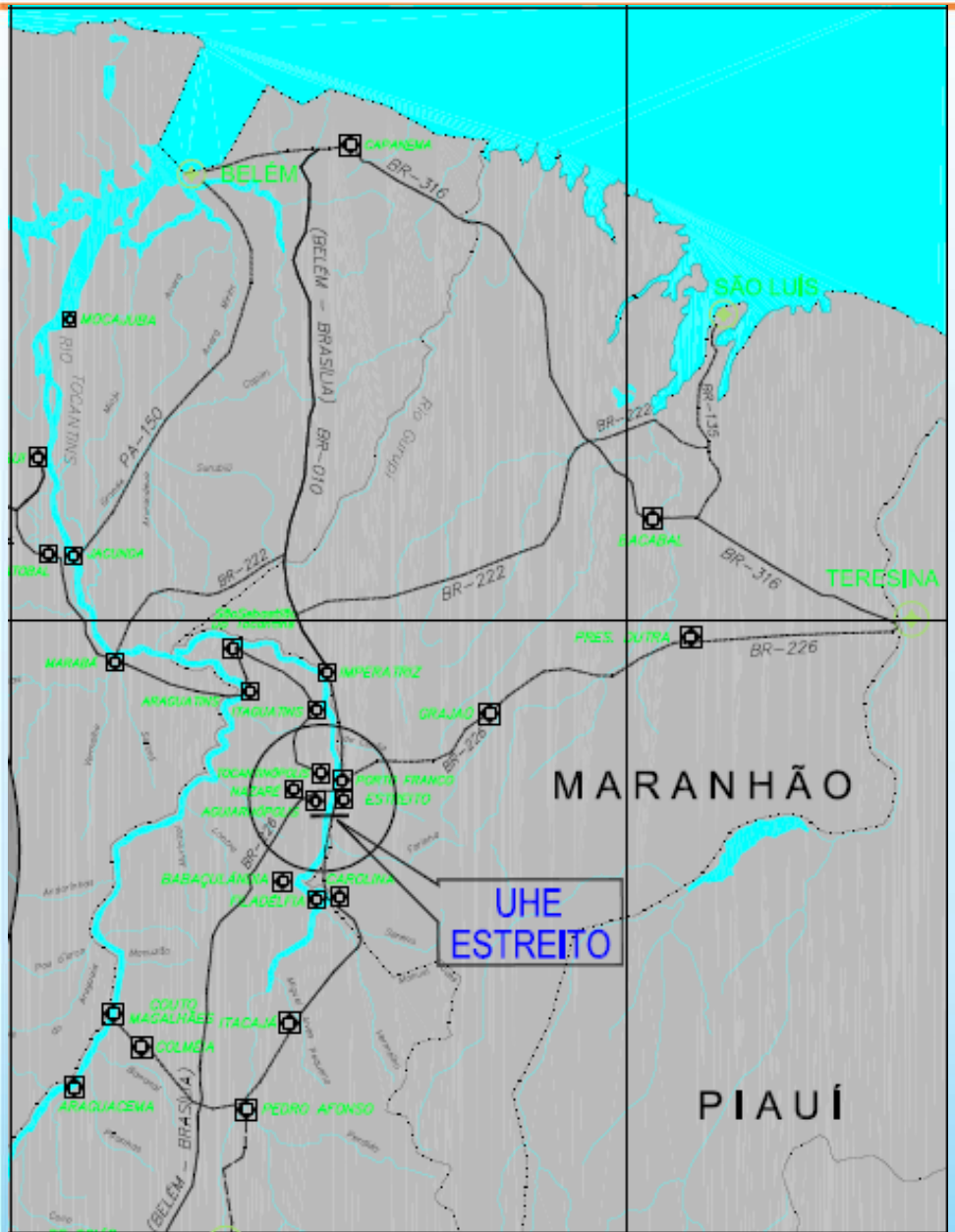
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CONSORTIUM PARTICIPANTS



LOCATION OF THE PROJECT



- **In the municipal districts of Estreito (MA), Aguiarnópolis (TO) and Palmeiras do Tocantins (TO).**
- **130 km from the city of Imperatriz (MA) and 513 km from the city of Palmas (TO).**
- **Access to the construction site via the Belém – Brasília Highway; 2.5 km from the city of Estreito**
- **Section of the Norte-Sul Railway close to the construction site on the left bank.**
- **Impacted municipalities: 12**

ESTREITO PROJECT CHARACTERISTICS

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Usina Hidrelétrica Estreito

- **Earth dam with clay core**
  - **480 meters in length**
  - **47 meters maximum top height**
  - **Crest at level 160**

- **Surface spillway – 14 spans - maximum discharge 62,719 m^3/s**

- **Power house with 8 generator units:**
  - **641.1 average MW assured energy**
  - **1,087 MW installed capacity**
  - **8 Kaplan turbines**

- **Reservoir area: 500 km^2**

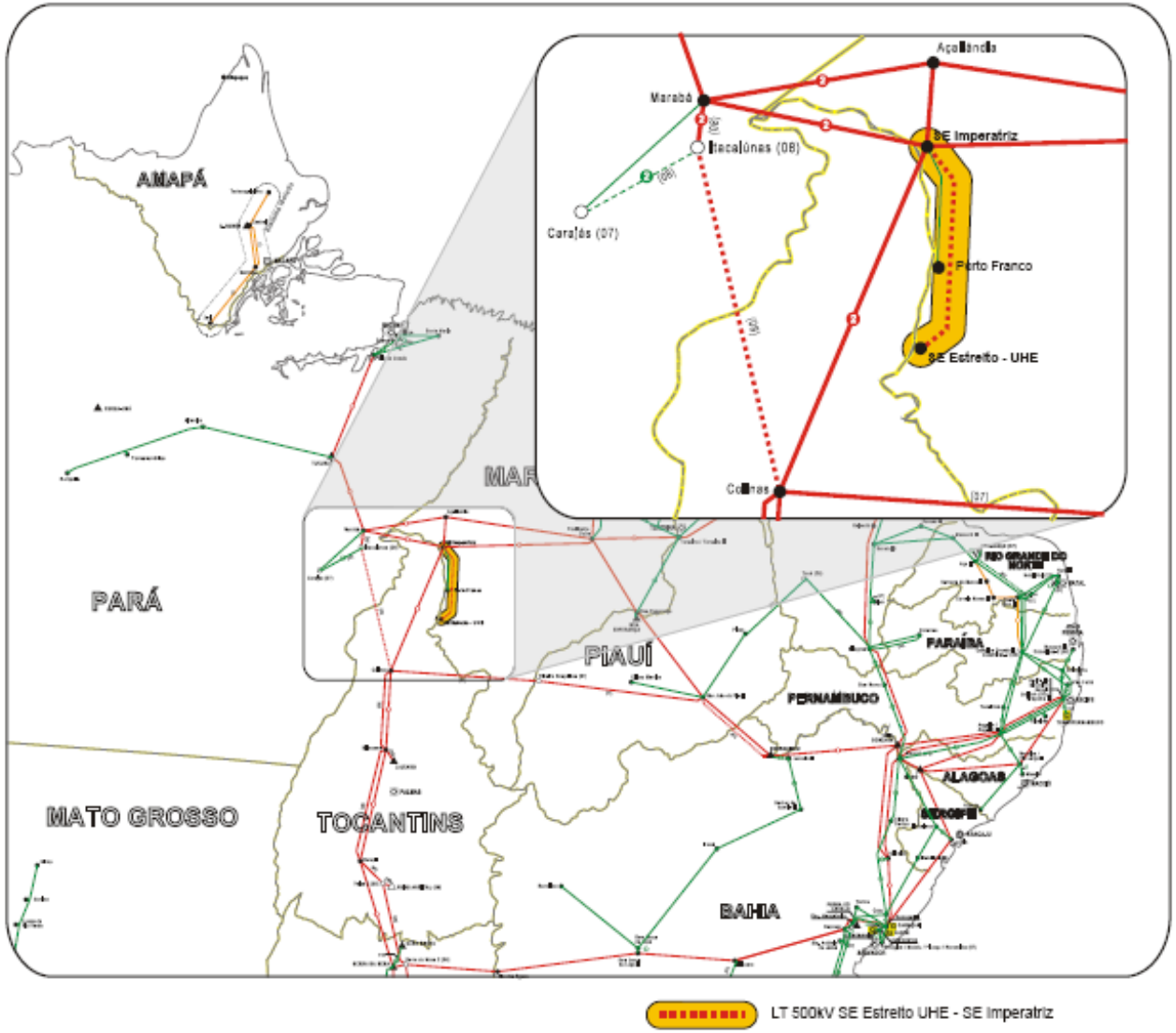
- **"Run-of-the-river" plant**

INVESTMENT: R$ 4,258 MILLION



CAPACITY TO SUPPLY THE NEEDS OF A CITY OF 4 MILLION INHABITANTS

TRANSMISSION LINE



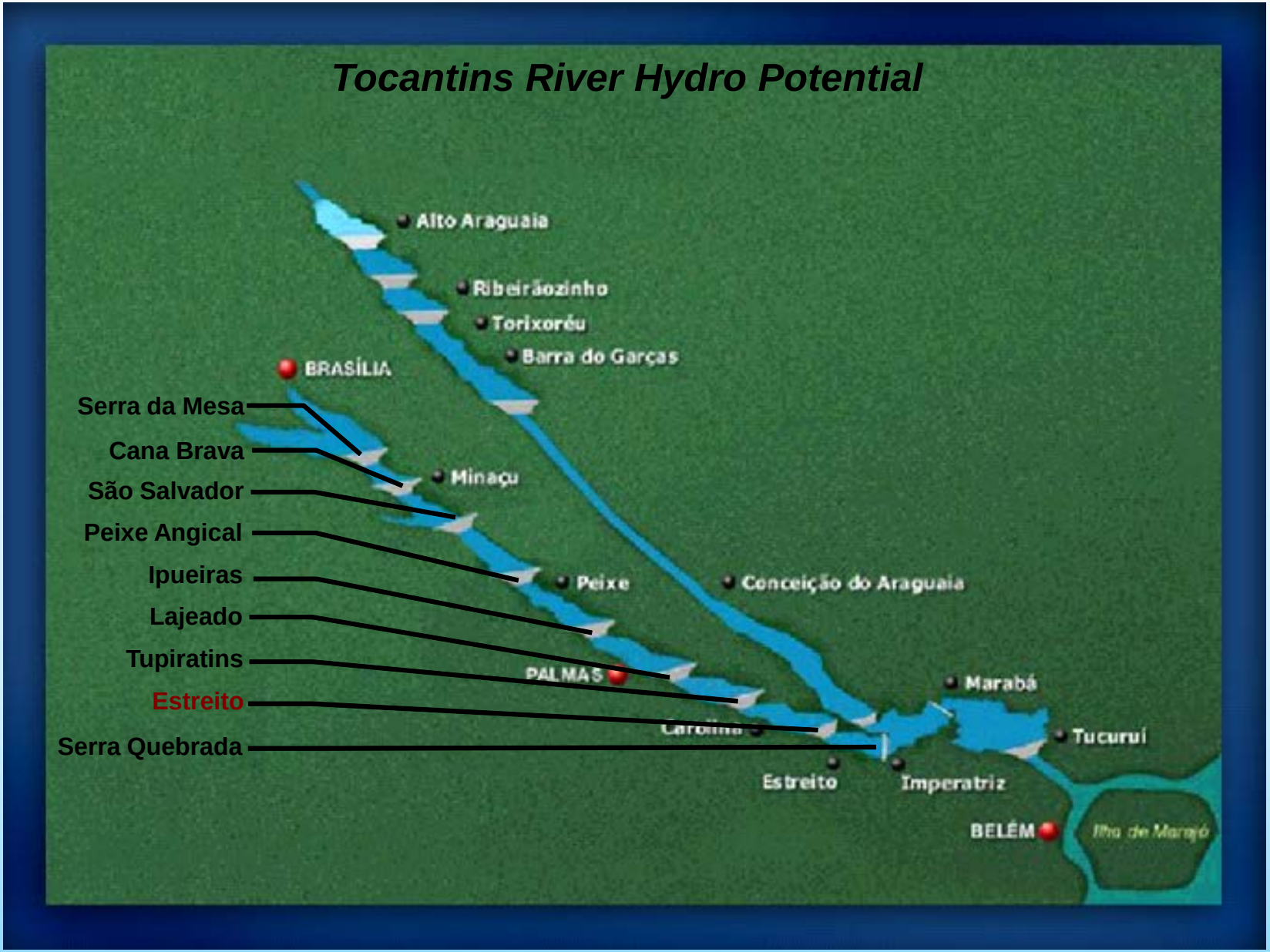
T L Estreito – Imperatriz 500kV, 140 km in simple-circuit and 10 km in double-circuit approaching SS Imperatriz.

INVESTMENT:

R$ 209 MILLION

TOCANTINS RIVER HYDROGRAPHIC BASIN

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Usina Hidrelétrica Estreito



REVAMPING OF INFRASTRUCTURE

Usina Hidrelétrica ESTREITO

- Federal Highways
  - BR-010/230 Highway (three bridges and one water course crossing using culverts)
- State Highways
  - TO-388/010 - Elevation grade
  - TO-425 – Protection of slopes of access ramps of the highway bridge
- Municipal and Feeder Roads
  - 27 accesses
  - 29 wooden bridges
- River Crossings
  - 12 ferry and boat mooring facilities restructuring – facilities currently active
- Transmission Lines
  - 7,377 m of line network in the state of Maranhão and 10,500 m in the state of Tocantins
- Reconstruction of Beaches
  - Construction of permanent beaches

INVESTMENT: R$156 MILLION

ADDITIONAL BENEFITS ACCRUING FROM THE PROJECT

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TAXES / COMPENSATION

Levying of taxes on investments in civil works and assembly/supply of equipment at the construction phase:

- **ISS: R$ 35 million**
- **PIS & COFINS: R$ 352 million**
- **ICMS: R$ 193 million**

- **Total: R$ 580 million**

After the construction phase, the following taxes will be levied annually on billings:

- **PIS & COFINS: R$ 59 million**
- **ICMS: R$ 108 million**
- **ROYALTIES: R$ 26 million**
  - **Municipalities: R$ 11.5 million**
  - **States of MA &TO: R$11,5 million**
  - **Federal Gov.: R$ 2.6 million**

ADDITIONAL BENEFITS ACCRUING FROM THE PROJECT

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- 250 km of navigable waterways on the Tocantins River
- Direct employees during construction: more than 10,000
- Indirect employees: more than 25,500
- About 80% of man power hired in the region
- Irrigable agriculture becomes a possibility (control of flows)
- Purchase of 99%+ of value of construction work in Brazil
- New leisure structures
- Improvements in local infrastructure (schools, police posts, hospital, etc.)
- Training of local man power
- Programs for creating incomes
- Environmental and health education
- Civic initiatives (health, documentation, culture and leisure)
- Development of touristic, commercial and agricultural activities

ENVIRONMENTAL AND SOCIAL ACTION PROGRAMS

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Usina Hidrelétrica Estreito















SEPTEMBER 2011

CESTE
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Usina Hidrelétrica Estreito

ENVIRONMENTAL PROGRAMS

PHYSICAL- BIOTIC

INVESTMENT: R$243 million

PHYSICAL-BIOTIC PROGRAMS

- Environmental Monitoring and Management
- Environmental Control in the Construction Phase
- Climatological Monitoring
- Seismological Monitoring
- Environmental Protection and Restoration of Areas Degraded by Construction Works – PRAD
- Monitoring areas on Hillsides/Marginal Slopes subject to Instability
- Hydro-geological Monitoring
- Scientific Survey of the Physical Environment
- Monitoring of Water Quality
- Clearing and Cleaning of the Reservoir Area
- Replanting the Reservoir Protection Strip
- Inventory, Recovery and Conservation of the Genetic Resources of the Vegetation
- Monitoring of the Fauna
- Conservation of the Ichtofauna
- Recovery and Preservation of the Land-based Fauna
- Control Vectors
- Installation of Conservation Units
- Monitoring and Control and Aquatic Macrophytes
- Hydro-sedimentological and Tributary Flow Monitoring
- Monitoring of Chelonians

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ENVIRONMENTAL PROGRAMS
SOCIO-ECONOMIC

INVESTMENT: R$465 million

SOCIO-ENVIRONMENTAL PROGRAMS

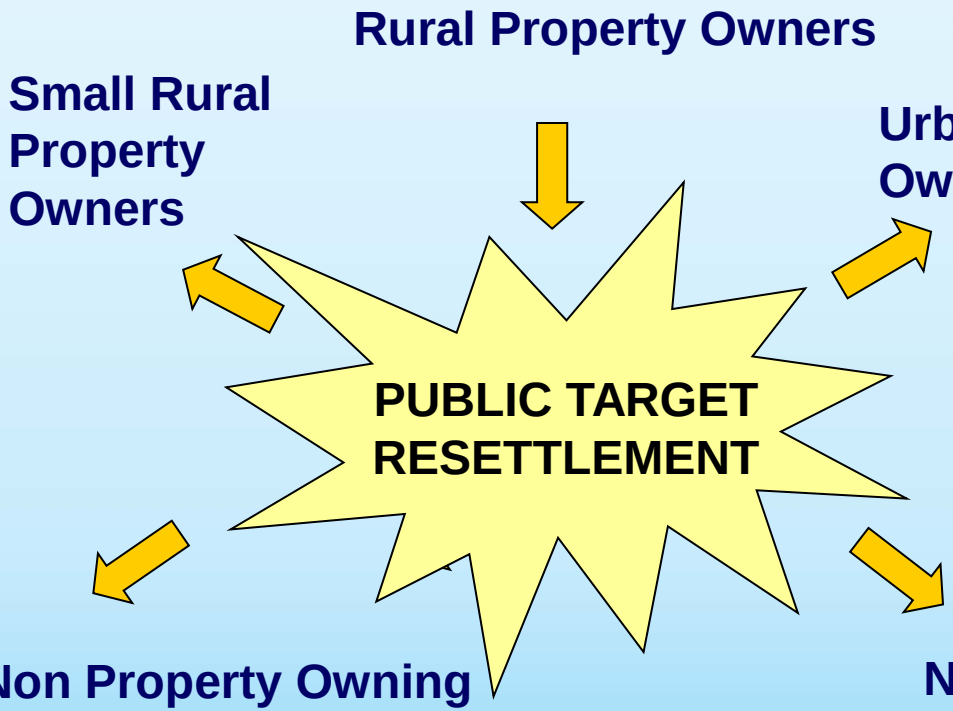
- Environmental Education for the Rural and Urban Population
- Medical-Sanitary Attendance for Resident Population in the AID
- Relocation and Support for Commercial Activities and Affected Services
- Development of Local Production Activities, Harnessing the Reservoir for Multiple Uses and Identification of New Investment Opportunities
- Support for the Surrounding Local Community and Family Subsistence Production
- Revamping of the Regional Infrastructure and Support Systems
- Revamping of Urban Areas
- Reservoir Master Plan
- Restoration of the Areas for Tourism and Leisure
- Intensive Archeological Research
- Saving/Recovery of Archeological Artifacts
- Enhancing the Focus on the Historical, Cultural and Landscape Heritages
- Initiatives for the Restoration of Losses and Relocation of the Rural and Urban Population
- Social Communication
- Medical-Sanitary Attendance and Environmental and Sanitary Education for the Construction Site Workers
- Support to the Public Security Services
- Support for Native Fruit Gathering Activities
- Support to the Migrant Population
- Support to the Indigenous Community

SOCIO-ENVIRONMENTAL PROGRAMS

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Usina Hidrelétrica Estreito

PROGRAM OF INITIATIVES FOR RESTORATION OF LOSSES AND RELOCATION OF THE RURAL AND URBAN POPULATION

53 Public Meetings to Present the Resettlement Plan
2,355 Home Meetings
10,412 Attendences at CESTE Information Centers





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Usina Hidrelétrica Estreito

PROGRAM OF INITIATIVES FOR RESTORATION OF LOSSES AND RELOCATION OF THE RURAL AND URBAN POPULATION (continuation)

RESETTLEMENT MODELS

RURAL

- **ACQUISITION:** resident and non-resident owner
- **COLLECTIVE RURAL RESETTLEMENT:** small resident rural property owner and rural non-property owning resident
- **RURAL LETTER OF CREDIT:** small resident rural property owner and rural non-property owning resident

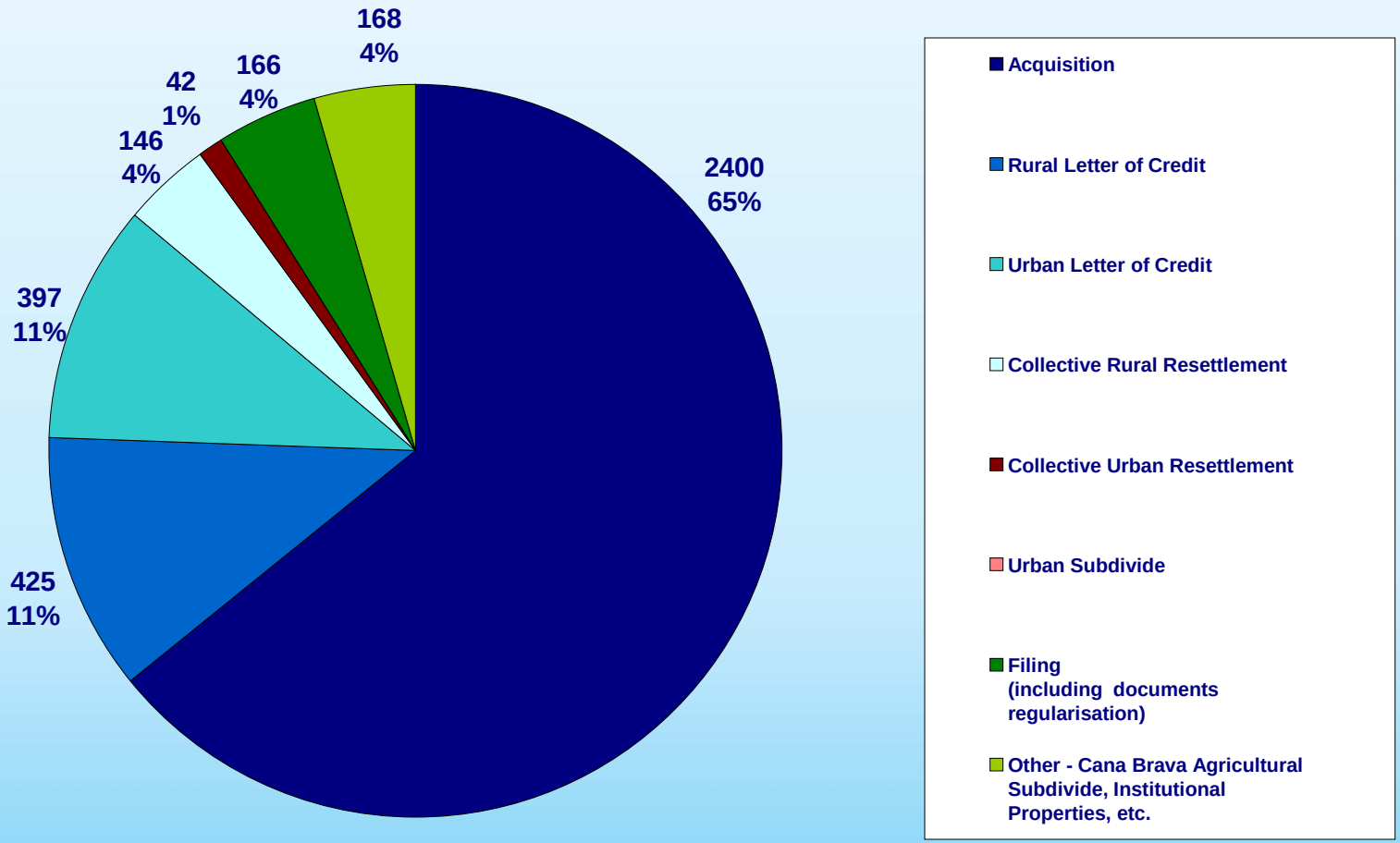
URBAN

- **ACQUISITION:** resident and non-resident owner
- **COLLECTIVE URBAN RESETTLEMENT:** resident urban property owner
- **URBAN LETTER OF CREDIT:** resident urban property owner and urban non-property owning resident
- **URBAN SUBDIVIDE:** resident urban property owner and urban non-property owning resident

CASE STUDIES

Population Resettlement*

Resettlement Option
Property Owner and Non-Property Owning (3,744)



* June/2011

RESETTLEMENT OF THE POPULATION

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URBAN REASETTLEMENT(01)



BEFORE



AFTER

RESETTLEMENT OF THE POPULATION

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RURAL RESETTLEMENTS (06)



BEFORE



AFTER

RESETTLEMENT OF THE POPULATION

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RURAL HOME IN BABAÇULANDIA (TO)



BEFORE

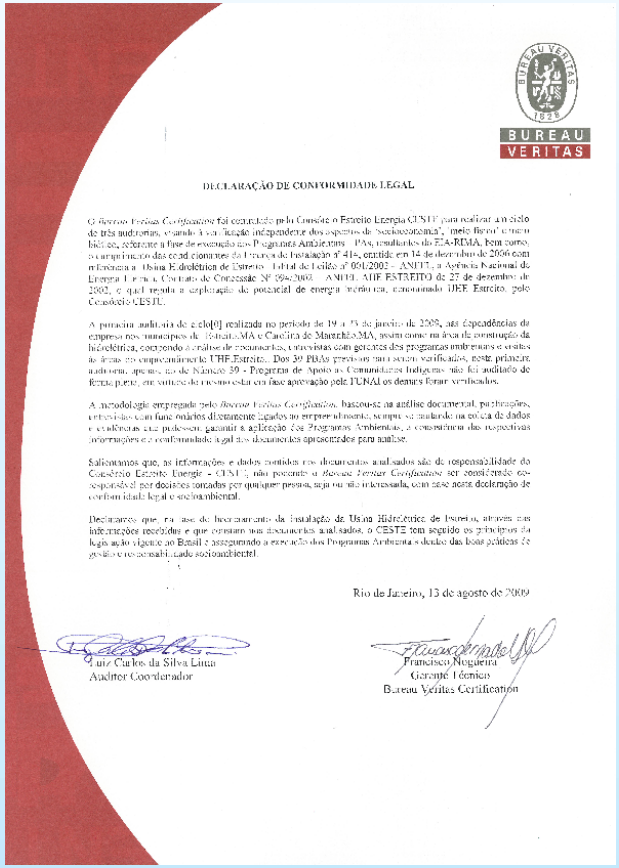


AFTER

ENVIRONMENTAL PROGRAMS AND SOCIAL ACTIONS

CESTE
Consórcio Estreito Energia
Usina Hidrelétrica Estreito

CERTIFICATION



BUREAU VERITAS

DECLARAÇÃO DE CONFORMIDADE LEGAL

O Bureau Veritas Certification foi contratado pelo Consórcio Estreito Energia CESTE para realizar a 4ª ciclo de três auditorias, visando à verificação independente dos aspectos de "socioeconomia", meio físico e meio biótico, referente à fase de execução dos Programas Ambientais - PAs, resultantes do EIA-RIMA, bem como, o cumprimento das condicionantes da Licença de Instalação nº 414, emitida em 14 de dezembro de 2006 com referência a Usina Hidrelétrica de Estreito - Lote nº 001/2003 – ANEEL, a Agência Nacional de Energia Elétrica, Contrato de Concessão Nº 056/2000 – ANEEL AIF ESTREITO de 27 de dezembro de 2002, o qual regula a exploração do potencial de energia hidrelétrica, denominado UHE Estreito, pelo Consórcio CESTE.

A presente auditoria de 4 ciclo[0] realizada no período de 19 a 23 de janeiro de 2009, nas dependências da empresa nos municípios de Estreito/MA e Carolina de Maranhão/MA, assim como na área de construção da hidrelétrica, compondo o escritório de engenheiros, e reuniões com gerentes dos programas ambientais e sociais de áreas do empreendimento UHE Estreito. Dos 30 PBAs previstos nas portarias verificados, neste primeiro auditoria, apenas, do de Número 30 - Programa de Apoio às Comunidades Indígenas não foi auditado de forma parcial, em virtude de ainda estar em fase aprovação pela FUNAI os demais foram verificados.

A metodologia empregada pelo Bureau Veritas Certification, baseou-se na análise documental, palestras, entrevistas com funcionários diretamente ligados ao empreendimento, sempre se atentando na coleta de dados e evidências que pudessem garantir a aplicação dos Programas Ambientais, a consistência das respectivas informações e a confiabilidade legal dos documentos apresentados para análise.

Salientamos que, as informações e dados contidos nos documentos analisados são de responsabilidade do Consórcio Estreito Energia - CESTE, não podendo a Bureau Veritas Certification ser considerada co-responsável por decisões tomadas por qualquer pessoa, seja ou não interessada, com base nesta declaração de conformidade legal e socioambiental.

Declaramos que, na fase de licenciamento da Instalação da Usina Hidrelétrica de Estreito, através das informações recebidas e que constam nos documentos analisados, o CESTE tem seguido os princípios da legislação vigente no Brasil e assegurando a execução dos Programas Ambientais dentro das boas práticas de gestão e responsabilidade socioambiental.

Rio de Janeiro, 13 de agosto de 2009

Luiz Carlos da Silva Lima
Auditor Coordenador

Francisco Nogueira
Gerente Técnico
Bureau Veritas Certification

FEB/2007

DECLARATION OF LEGAL CONFORMITY

MAR/2008

Environmental Evaluation Report concluding that the Estreito Hydroelectric Power Project satisfactorily meets the requirements of the Equator Principles

JAN/2009 and JAN/2010

DECLARATION OF LEGAL CONFORMITY

During the installation licensing phase of the Estreito Hydroelectric Plant and based on information received and contained in the analyzed documents, we declare that CESTE has adhered to the principles of the legislation in effect in Brazil, ensuring the execution of the Environmental Programs according to the good practices of management and socio-environmental responsibility.

SOCIAL ACTIONS

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Consórcio Estreito Energia
Usina Hidrelétrica Estreito



INVESTMENT: R$129 million

SOCIAL RESPONSIBILITY

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Usina Hidrelétrica Estreito

TCMs

SIGNATURE OF 12 MUTUAL COMMITMENT AGREEMENTS

- Master Plans
- Squares
- Police Departments
- Military Police Detachment
- Clinic
- Health Laboratory Network
- Dental Clinic
- IT Laboratory
- Street Market
- Schools/Class Rooms
- Public Buildings
- Headquarters of Associations
- Child Adolescent Guardianship Council
- Sewage Collection and Treatment Systems
- Community Radio Station
- Sports Gymnasium
- Cultural Center
- Seniors' Leisure Center
- Leisure Area/Community Center
- Training Center
- Hog Pen
- Library
- Fire Department
- Landfill
- Daycare center
- Lodge



Inauguração Posto de Saúde em Aguiarnópolis



Inauguração do Auditório do Centro Comunitário de Filadélfia

SOCIAL RESPONSIBILITY

CESTE
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Usina Hidrelétrica Estreito

"CESTE Social Workshop"

PARTNERSHIP WITH SESI – CIVIC INITIATIVES



- Preventive and remedial dental services, with distribution of **Dental Health Kits**
- Ophthalmological treatment with the supply of **eye glasses**
- **Gynecological and urological** treatment
- Health Space – physical assessment, growth profile, body composition, nutritional state, blood pressure check and body posture evaluation, measurement of Body Mass Index, levels of triglycerides, cholesterol and glucose and the **issue of the Well Being Card**
- **Citizenship** – issue of documents (RG, CPF, CTP and Voter Card)
- **Leisure** - gymnastics, games for developing cognitive and motor skills, "Zen Space" and dance hall
- **Beauty** care
- **"Brazil Kitchen"** – Basic Nutritional Education Course for the appropriate use of food in low cost and high nutritive value recipes

SOCIAL RESPONSIBILITY

“Cinema Workshop”
“Health Caravan”
“Cine Transformer”

- **Cinema in 12 municipalities**
- **Applications of fluoride and distribution of dental kits**
- **Dental treatment: restoration, extractions, dressings and oral prophylaxis**



SOCIAL RESPONSIBILITY

“CESTE Summer”



- **Environmental guidance to the boatmen on the beaches**
- **Distribution of sun block and condoms to bathers**
- **Developing tourism and new businesses in the “CESTE/CNEC Stall”, which attracted the principal craftsmen and cultural values of the region**
- **Educative campaign “A Clean Beach, A Safe Beach!” in partnership with CESTE, SESI and the environmental protection agents trained under the Environmental Education Program**
- **Increasing the awareness of the importance of keeping the beaches clean and, in the case of the boatmen, of the correct packaging of solid waste generated during the beach high season**

SOCIAL RESPONSIBILITY

CESTE
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Usina Hidrelétrica Estreito

National Arquives Exhibition

- Exhibition **"50 years of National Development"**, which tells the story of the economic development of Brazil through images of major national achievements, from the beginnings of the automobile industry and the origins of the information technology era
- Exhibition **"Drama and Euphoria"**, which tells the story of Brazil's participation in the World Cups





7,153 visitors*

* June/2011

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Usina Hidrelétrica Estreito

Professional Qualification

CESTE/SENAI/CITY GOVERNMENTS PARTNERSHIP

Professional education programs of the skills qualification and the upgrading types in order to develop qualified labor in the 12 municipalities covered by the Estreito Hydroelectric Project

- **> 4,000 trained**



GRADUATION: QUALIFICATION COURSES IN ARAGUAÍNA - TO

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Usina Hidrelétrica Estreito

PROERD

EDUCATIONAL NARCOTICS AVOIDANCE PROGRAM - PROERD

Joint effort between the Military Police, schools, families and private enterprise, offering educational activities in the class room to prevent and reduce the use of narcotics and the practice of violence in the municipalities of Aguiarnópolis, Babaçulândia, Filadélfia and Tocantinópolis



**GRADUATION PROERD PROJECT:
TOCANTINÓPOLIS AND AGUIARNÓPOLIS (TO)**

1,500 beneficiaries

SOCIAL RESPONSIBILITY

ZIG-ZAG PROJECT

CESTE/SINC-TO AND CITY GOVERNMENTS PARTNERSHIP

Motivating entrepreneurship in the apparel sector (cutting and sewing and silk screening), generating employment and income in 10 municipalities in the area of influence of the Estreito Hydroelectric Project



GRADUATION: ZIG ZAG PROJECT
BABAÇULÂNDIA AND BARRA DO OURO (TO)

900 trained

SOCIAL RESPONSIBILITY

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Usina Hidrelétrica Estreito

INMED BRAZIL PROJECT

HEALTHY CHILD, HEALTHY FUTURE PROJECT IN PARTNERSHIP WITH INMED/BRAZIL, SUEZ FOUNDATION, ALCOA INSTITUTE AND CESTE

Works with sanitary and nutritional education for 1st to 4th grade students at public schools in the 12 municipalities within the influence of the Estreito Project (stool and blood tests and measurement of weight and height for assessing cases of malnutrition, anemia and the existence of worm infestation. In the event that test prove positive, the appropriate medication is administered)



TRAINING OF MUNICIPAL COORDINATORS: HEALTHY CHILD, HEALTHY FUTURE PROJECT

30,000 children from 5 to 14 and 1,300 professors from 255 schools (urban and rural)

SOCIAL RESPONSIBILITY

OTHER ACTIONS

- 1st , 2nd and 3rd **FEAPA** – Food and Family Agriculture Fair in Palmeiras do Tocantins - announcement of environmental initiatives, particularly programs for supporting family agriculture and economic activities, and participation in round tables to discuss alternatives for agricultural production in the municipality and region

- Publication of the Book **"Quebradeiras de Coco de Babaçu" (Babaçu Coconut Crackers)**
  Recognition and focus on local culture

- Brazilian Association of Parents and Friends of the Disabled (**APAE**)
  Donation of the ALCOA Institute and CESTE:
  - Construction of an office in Palmeirante
  - Donation of a mini-bus to Estreito city government



SOCIAL RESPONSIBILITY

CESTE
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Usina Hidrelétrica Estreito

ESTREITO SOCIAL INVESTMENT - ISE

IMPLEMENTATION OF PROJECTS FOR SUPPORTING THE SUSTAINABLE DEVELOPMENT OF THE MUNICIPALITIES IN THE REGION UNDER THE INFLUENCE OF THE ESTREITO PROJECT



SOCIAL SUBCREDIT – BNDES

BNDES

SOCIAL RESPONSIBILITY

ESTREITO SOCIAL INVESTMENT - ISE

ENGAGEMENT OF NON-GOVERNMENTAL ORGANIZATIONS

GAIA – Interdisciplinary Application for Apprenticeship Group
Services for managing social investments to be allocated within the scope of the ISE scheme and promotion of Sustainable Regional Developed (DRS)

CEDAC – Community Educational and Documentation Center
Strengthening the hierarchy of the municipalities' school network

CARE – International Brazil
Strengthening local management skills

ALFASOL – Solidarity Literacy Association
Literacy

SOCIAL RESPONSIBILITY

CESTE
Consórcio Estreito Energia
Usina Hidrelétrica Estreito

ESTREITO SOCIAL INVESTMENT - ISE

IMPLEMENTATION OF PROJECTS FOR SUPPORT TO THE SUSTAINABLE DEVELOPMENT OF THE MUNICIPALITIES

BNDES

- Implementation of the Park for the Tocantins Food and Family Agriculture Fair of Palmeiras do Tocantins, Community Vegetable Garden and Demonstration Units (IDEP)
- Construction of a Warehouse for Handling and Commercialization of Honey in Palmeirante – development of apiculture and expanding commercialization
- Construction of the Center for the Babaçu Coconut Artisans Association of Aguiarnópolis (ACBA) – competitive insertion of the local crafts industry
- Expansion of the Center for the Estreito Boatmen's Association (ABEMA) – training and boat maintenance
- Construction of the headquarters of the Filadélfia Community and Charitable Association (ACOMBEF) – production of cookies from semi-arid land fruits
- Construction of a Center for the Boatmen's Association of Babaçulândia (BANZEIRO DO LAGO) – realization of social, educational, touristic, environmental and sporting activities
- Upgrading of the FrutaSã factory in Carolina – expansion of capacity and improved quality in the production of fruit pulp
- Installation of the Carolina Historical Museum – preservation of the city's heritage – a museological and touristic beacon in the region

* June/2011

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Usina Hidrelétrica Estreito

ESTREITO SOCIAL INVESTMENT - ISE

BNDES

CREATION OF THE 1st FISHING COMPLEX OF THE REGION

CESTE, the Fisheries and Apiculture Ministry and IBAMA have signed a cooperation agreement for the installation of the Integrated Complex for Fish Catchment, Processing and Commercialization



The project is being implemented with the fishing communities of the region, IBAMA and MPA

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Usina Hidrelétrica Estreito

PHOTOGRAPHS OF THE PROJECT

ESTREITO HPP

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Usina Hidrelétrica Estreito

CESTE

UHE ESTREITO
Rio Tocantins - Maranhão/Tocantins

Tractebel Engineering
GDF SUEZ

2007







2008









DAB/dab

ESTREITO HPP

CESTE
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Usina Hidrelétrica Estreito

CESTE

UHE ESTREITO
Rio Tocantins - Maranhão/Tocantins

Tractebel Engineering
GDF SUEZ

2009



2010



DAB/dab

ESTREITO HPP

UHE ESTREITO
Rio Tocantins - Maranhão/Tocantins

2011







OVERVIEW OF THE PROJECT

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Usina Hidrelétrica Estreito



SPILLWAY

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500kV SUBSTATION

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WATER INTAKE

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CONTROL BUILDING

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Usina Hidrelétrica Estreito



5/6 UNIT- ASSEMBLY OF ROOF COVERING SUPPORTS

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Usina Hidrelétrica Estreito



ASSEMBLY AREA

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ASSEMBLY OF GENERATOR ROTOR OF UNIT 4 IN THE AA

CESTE
Consórcio Estreito Energia
Usina Hidrelétrica Estreito



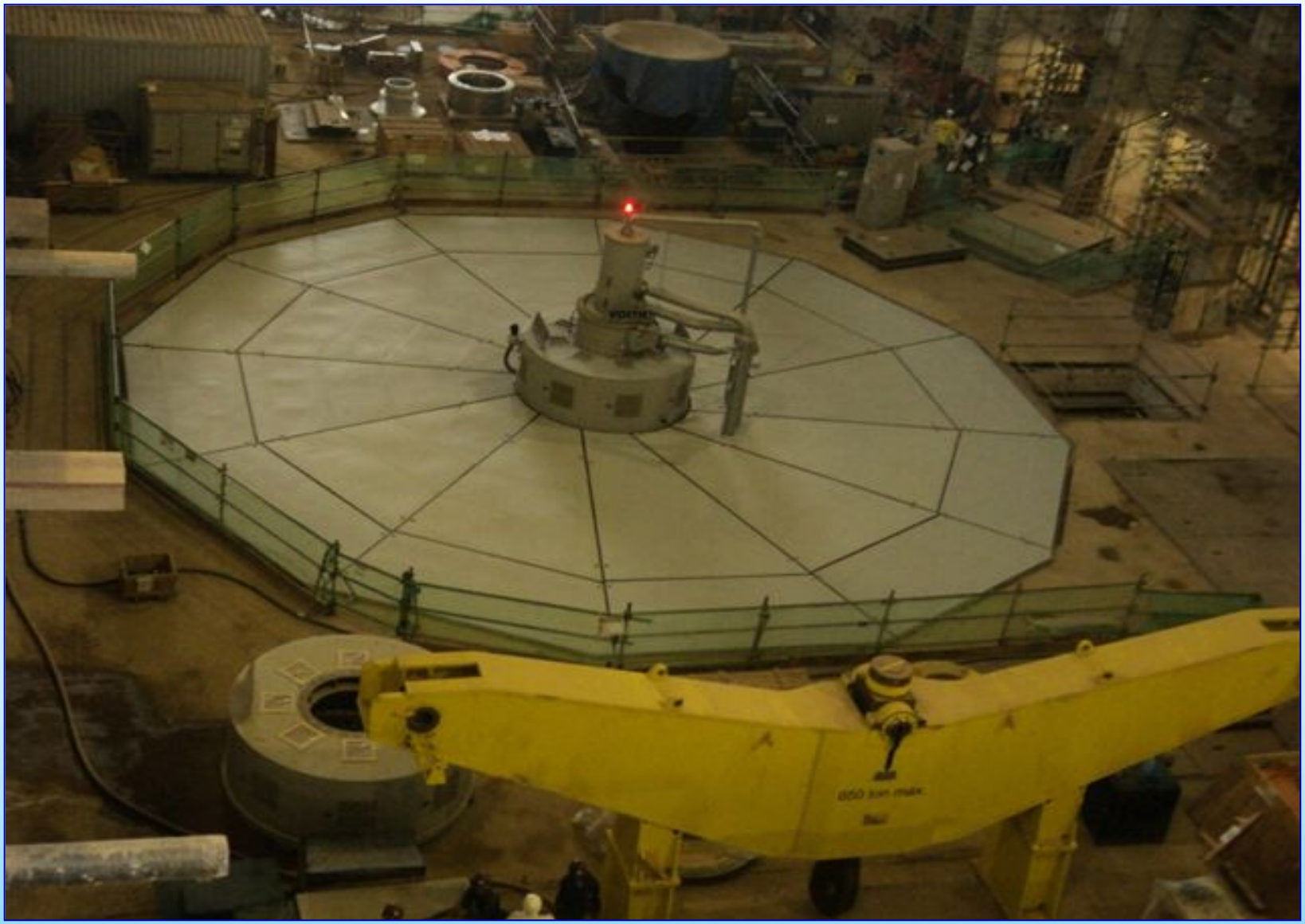
ASSEMBLY OF THE UNIT 04 TURBINE

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Usina Hidrelétrica Estreito



UNIT 2 – COMMERCIAL OPERATION ON JULY 2, 2011

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UNIT 03- SEALING OF THE MACHINE

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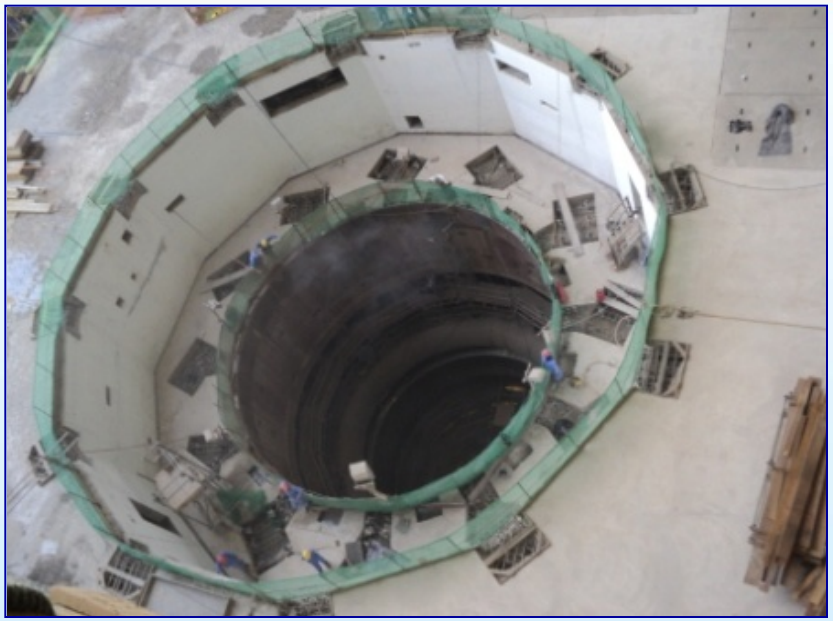
UNIT 04

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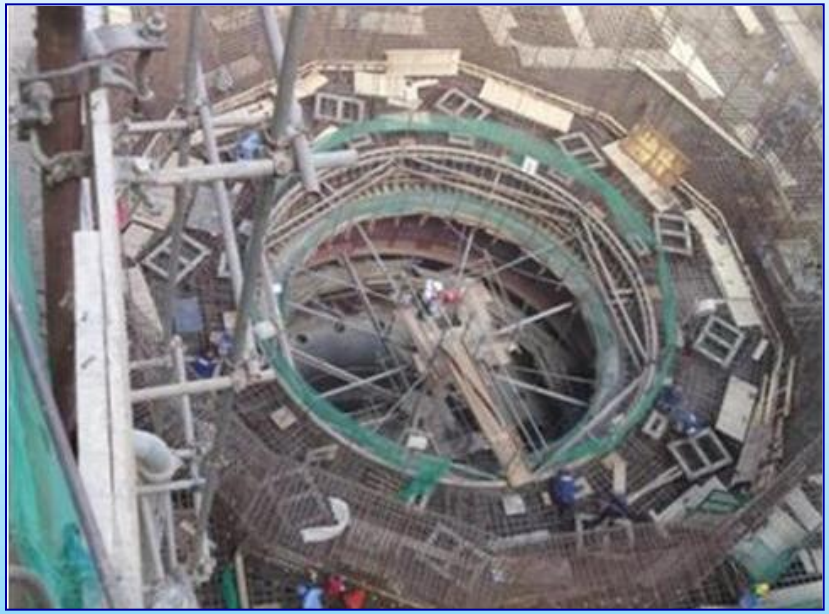


UNITS 05, 06, 07 AND 08

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VERTICAL STRUCTURE OF OVERHEAD LINES

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Usina Hidrelétrica Estreito



ASSEMBLY OF OVERHEAD LINE 3/4

CESTE
Consórcio Estreito Energia
Usina Hidrelétrica Estreito



OVERHEAD LINE OF UNITS 03 AND 04

CESTE
Consórcio Estreito Energia
Usina Hidrelétrica Estreito



OVERHEAD LINE OF UNITS 03 AND 04 SUBSTATION - 500kV

CESTE
Consórcio Estreito Energia
Usina Hidrelétrica Estreito



CESTE
Consórcio Estreito Energia
Usina Hidrelétrica Estreito

THANK YOU!